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ABSTRACT

This report discusses a study that investigated whether 68 graduate physical therapy students at Nova Southeastern University (NSU) possessed greater reflective practitioner characteristics than 100 first-year students as a result of the completion of the NSU physical therapy problem-based curriculum. Reflective practitioners are described as practitioners who, for personal growth, question assumptions in practice by deliberately taking time to recall and analyze actions taken and processes used to arrive at these actions. The Reflective Practitioner Instrument (RPI) was administered to students at the end of each year in the curriculum. This instrument was modified and validated from the Reflective Teaching Instrument (RTI) and was designed to measure reflective practice construct dimensions in terms of diagnosis, testing, and personal causation. Results found no significant differences in each of the 15 reflective practitioner characteristic items. In fact, there were several items in each construct dimension in which the first-year students averaged greater than the graduate candidates. Recommendations are made for implementing activities to enhance reflective practitioner constructs, such as incorporating more formalized portfolios, including peer and self-assessment, and requiring personal and reflective journals. Appendices include the RPI and the RTI. (Contains 27 references.) (CR)

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COMPARISON OF REFLECTIVE PRACTITIONER CHARACTERISTICS OF FIRST AND SECOND YEAR MASTER'S IN PHYSICAL THERAPY STUDENTS AT NOVA SOUTHEASTERN UNIVERSITY

ED 414 699

Research Methodology

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Tampa Cluster

A practicum report presented to Programs for Higher Education in partial fulfillment of the requirements for the degree of Doctor of Education

Nova Southeastern University

November, 1997

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Abstract of a practicum report presented to Nova Southeastern University in partial fulfillment of the requirements for the degree of Doctor of Education

COMPARISON OF REFLECTIVE PRACTITIONER CHARACTERISTICS OF FIRST AND SECOND YEAR MASTER'S IN PHYSICAL THERAPY PROGRAM STUDENTS AT NOVA SOUTHEASTERN UNIVERSITY

by

Gina M. Musolino

November, 1997

The Physical Therapy Program at Nova Southeastern University (NSU PT) strives to develop practitioners to be effective in future health care environments. These practitioners need to possess reflective practitioner (RP) characteristics as graduate outcomes and the NSU PT problem-based learning (PBL) curriculum purports to foster these RP characteristics. The purpose of this study was to compare the RP characteristics of first and second year NSU PT students to determine whether there was a difference in RP characteristics. The research question addressed was: "Is there a statistically significant difference between first year NSU PT students' and second year NSU PT graduate candidate students' RP characteristics, as measured by the RP Instrument (RPI)?"

It was hypothesized that the graduate candidates would exhibit greater RP characteristics than the first year students.

The 15-item Likert scale RPI was administered to students at the end of each year in the curriculum. This instrument was modified and validated from the Reflective Teaching Instrument, designed to measure RP construct dimensions in terms of diagnosis, testing and personal causation.

Following performance of a one-tailed t-test analysis for independent groups (critical value 1.65), there was no significant difference noted in each of the 15 RP characteristic items, representing the three construct dimensions, at the .05 level of significance. There were several items in each construct dimension in which the first year students averaged greater than the graduate candidates.

Further research was recommended to repeat this study in both quantitative and qualitative fashions, to glean more conclusive evidence on the RP construct dimensions of NSU PT students. Further recommendations included implementation of activities to enhance RP constructs, incorporating more formalized portfolios, peer and self-assessment, personal and reflective journals, experiential research and others.

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Chapter 1

INTRODUCTION

Nova Southeastern University (NSU) is a private university offering traditional and non-traditional programs of study from kindergarten through the doctoral level. The Physical Therapy (PT) Department is a component of the Health Professions Division at NSU as a result of a recent merger of Nova and Southeastern Universities. The PT problem-based learning curriculum was a new program, recently receiving initial accreditation from the American Physical Therapy Association's (APTA, 1996), Commission on Accreditation of Physical Therapy Education.

The mission of the NSU PT Program (see Appendix A) is to prepare physical therapists as primary health care providers, who are lifelong learners and reflective practitioners (RP). The concept of a RP entails questioning assumptions in practice, for personal growth, by deliberately taking time to recall and analyze actions taken and the processes used to arrive at these actions (Schon, 1987). According to Ostermann and Kottkamp (1993), the purpose of reflection is two-fold: (a) to initiate a behavioral change, and (b) to realize an improvement in professional practice. The research question considered in this study was do the NSU PT graduate candidates possess greater reflective practitioner characteristic (or constructs) than the first year NSU PT students, as a result of the completion of the Nova Southeastern University PT problem-based curriculum.

Nature of the Problem

Although the NSU PT Program philosophy states that the program graduates professionals who are self-directed lifelong learners, it is unknown to what extent these reflective practitioner characteristics were being attained by program graduates. According to Commission on Accreditation of Physical Therapy Programs(APTA, 1995, a.), physical therapists should be able to clinically reason and critically analyze using scientific principles (see Appendix B). Part of the NSU PT philosophy states that the program is graduating reflective practitioners and life-long learners (see Appendix A).

If the PT program curriculum was addressing the need to develop reflective practitioners, there should be a difference in these characteristics, when comparing first year and second year NSU PT students. First year students merely begin the RP activities in the curriculum and are unseasoned in the clinical decision-making model thought processes. While second year NSU PT students have refined these reflective practitioner skills and have put them into clinical practice as a portion of a 20-week clinical education experience.

Prior to this study, no formal measurement of RP characteristics had been completed for physical therapists or PT students, from a quantitative standpoint. The problem was the extent to which the characteristics of a reflective practitioner were being attained by NSU PT students was unknown. The second year students may not exhibit greater RP characteristics than the

first year students, if the curriculum has no effect or RP skill enhancement activities, lack the intensity to provide a difference in the second year and through clinical education.

Purpose of the Study

The purpose of this study was to compare the reflective practitioner characteristics of the first year and second year NSU PT students to determine whether there was a difference in RP characteristics. A comparison of the extent to which second year NSU, masters in physical therapy (MPT) program candidates, and first year NSU MPT program students met the criteria of reflective practice, according to the Reflective Practice Instrument (RPI), modified from the Reflective Teaching Instrument (RTI) by Kirby and Teddlie (1989), was completed. This study aided in precursory efforts to determine, from a quantitative standpoint, the influence of the curriculum with respect to developing reflective practitioners, for NSU PT.

Significance to the Institution

The Physical Therapy Program at Nova Southeastern University (NSU PT) is a problem-based learning (PBL) curriculum. One of the aims of which was to place emphasis on the development of a reflective practitioner by teaching the student to learn from and solve problems. Curriculum content is organized around carefully designed and guided clinical patient problems which students study, discuss and research in small teams (tutorials). In this way, the students synthesize information as it is relevant to the clinical problem. Simply put, PBL encourages students to learn

using a process similar to that used to solve problems in clinical practice (Albanese & Mitchell, 1993; Barrows, 1997).

A central principle to PBL is the responsibility for a students' own learning and in an eventual life-long fashion. PBL students, it is believed, develop an ability and confidence to direct their own learning through a process of inquiry and reflection, with the curriculum providing this opportunity (Barrows, 1997; Hadwin, 1996; Vasconez, Donnelly, Mayo & Schwartz, 1993). The physical therapy faculty and acting program director wanted to determine to what extent the characteristics of reflective practice were being met for both the Commission on Accreditation of Physical Therapy Education (see Appendix B) and NSU PT mission and philosophy outcome statements (see Appendix A).

In a study by May, Morgan, Lemke, Karst, and Stone (1995), practicing physical therapy clinical educators listed commitment to learning, problem-solving, responsibility, professionalism, and critical thinking in the top ten generic abilities or attributes for the profession (p. 4). In light of health care reform and the environments in which NSU MPT graduates will be employed, the role of reflective practice should parallel the clinical readiness the future clinicians will need in practice.

Relationship to the Seminar

This practicum proposal was directly related to the Research Methodology seminar in that quantitative data was used to draw comparisons between second year NSU MPT graduate candidates and

first year NSU MPT students in terms of their reflective practitioner abilities. Likert studies, according to Alreck and Settle (1995), provide the researcher with power and simplicity for comparison of otherwise somewhat uncomparable data, due to summated results. The advantages include, "flexibility, economy and ease of composition" (Alreck & Settle, 1995, p. 117).

Relationship to the Concentration

The area of concentration was physical therapy Curriculum Development and Outcomes Evaluation. This research considered the impact of the PBL curriculum on the outcome of the reflective practitioner attributes of the NSU PT program students at two distinct points in the curriculum process. This study served, in quantitative terms, to address the reflective attributes of NSU PT program students.

Research Question

The research question for this study was: "Is there a difference between first year Nova Southeastern University (NSU), Master's in Physical Therapy (MPT) students' and second year NSU MPT graduate candidate students' reflective practitioner characteristics, as measured by the Reflective Practitioner Instrument (RPI)?"

Research Hypothesis

The NSU MPT graduate candidates possess a greater RPI score than the first year NSU PT students, as a result of the completion of the NSU PT PBL curriculum.

Definition of Terms

For the purposes of this practicum, the following terms were defined:

Construct code. These are components of a theoretical framework for reflective practice defined by Kirby and Teddlie (1989) which include, diagnosis, testing and personal causation:

> . . . diagnosis as problem setting or the ability to set or frame the problem based on professional knowledge, past experience, the uniqueness of the situation and people involved, social and professional norms of behaviors and expectations held by others. Testing was defined by these researchers as the RP taking an exploratory stance, evaluating the problem according to its ability to be solved, the desirability of the solution, and the congruence of the solution with fundamental values and theories held by the practitioner. Finally, personal causation was defined as acceptance of responsibility for actions and their consequences. (p. 46)

Entry-level clinician. This ia an entry-level clinician that utilizes critical thinking to make independent decisions concerning patient needs and in the provision of physical therapy services. The entry-level clinician needs only occasional guidance, primarily when addressing new and complex problems (APTA, 1995, b.); analogous to the NSU MPT program graduate candidate for the purposes of this study.

NSU PT 1 students. These were one hundred first year students enrolled in the PBL NSU MPT curriculum, who have completed their first year (five 9-week semesters) of professional studies, including one weekly exposure, Tier I clinical education experience, in the fourth 9-week semester and are just embarking on their second year of problem-based learning studies.

NSU PT graduate candidates. These were sixty-eight second year students, enrolled in the PBL NSU MPT curriculum who have completed eight, 9-week semesters, Tier I clinical education, masters thesis defense and are completing the final weeks of their Tier II, 20-week, clinical education internship; who are considered to be entry-level clinicians.

Physical therapy. This is the care and services provided by or under the direction and supervision of a physical therapist, which includes (see Appendix B):

> 1) Examining patients with impairment, functional limitations, and disability or other health-related conditions in order to determine a diagnosis, prognosis, and intervention. 2) Alleviating impairments and functional limitations by designing, implementing, and modifying therapeutic interventions. 3) Preventing injury, impairments, functional limitations, and disabilities, including the promotion and maintenance of fitness, health and quality of life in all age populations. 4) Engaging in consultation, education, and research. (APTA, 1995, a.)

Physical therapist. This is "a licensed health professional who offers services designed to preserve, develop and restore maximum physical function" (APTA, 1995, b.).

Problem-based learning (PBL). This is a curriculum innovation characterized by the use of case studies as a vehicle through which small groups of students learn problem-solving skills while simultaneously directing their own acquisition of content knowledge (Albanese & Mitchell, 1993). Upon presentation of a case, students decide how to identify major problems, gaps in their knowledge and skills, and strategies for resolving those gaps. Learning is motivated by a need to resolve problems (Barrows, 1997). Faculty tutors guide the problem solving

process and skill and content acquisition, rather than teaching through lectures (Vasconez, Donnelly, Mayo, & Schwartz, 1993).

Reflective practitioner (RP). According to Kirby and Teddlie (1989), an RP is defined as follows:

> the ability to integrate research with practice in response to uncertainty and complexity that, citing according to Russell and Spafford (1986), qualifies the practitioner for professional status. This theory is vital to occupations where theory is incomplete or where multiple, even conflicting theories confront the practitioner. (p. 45)

Reflective practitioner instrument (RPI). This is the modification of the Reflective Teaching Instrument (RTI) designed by Kirby and Teddlie (1989), an initial attempt to quantitatively measure a teacher's perceived engagement in reflective practice. This instrument was modified, with consent (see Appendix C) of the instrument research author (P. Kirby, personal communication, June 27, 1997), with substitution of physical therapy terminology for educational jargon (see Appendix D).

Chapter 2

REVIEW OF RELATED LITERATURE

The literature review considered the broad concepts of the reflective practitioner, as first described by Schon (1987) and the clinical reasoning process. Specifically, benefits of problem-based learning (PBL) in the development of the reflective practitioner (RP), graduate outcomes in physical therapy education and a critique of the development of the RTI by Kirby and Teddlie (1989), were considered.

Reflective Practice

According to Brookfield (1995), the concept of the reflective practitioner is defined as:

> Rooted in the Enlightenment idea, that we can stand outside of ourselves and come to a clearer understanding of what we do and who we are by freeing ourselves of distorted ways of reasoning and acting. There are also elements of constructivist phenomenology in the understanding that identity and experience are culturally and personally sculpted, rather than existing in some kind of objectively discoverable limbo. (p. 214)

Dewey (1933), purported reflection as a cognitive activity which begins in perplexity and "fork-road" situations, but is an active persistent careful consideration of any belief or knowledge (p. 23). This cognitive activity includes a responsibility for future consequences and is both retrospective and progressive.

Reflective Practitioner

What does a professional need to know about a reflective practice to develop one? Is any professional able to have reflective practice? How can merely reflecting professional work improve practice? These are issues that are raised when the

concept of reflective practice is first encountered.

A reflective practice according to Ostermann and Kottkamp (1993) is based on six key assumptions:

> (1) Everyone regardless of age, stage or attitude needs professional growth opportunities. (2) All professionals have a natural desire to want to improve. (3) All professionals want to learn. (4) All professionals are capable of assuming responsibility for their own professional growth and development. (5) All people need and want information about their performance. (6) Collaboration with other professionals enriches one's professional development. (p. 33)

Dewey (1933) first identified reflection as a cognitive activity with five stages of reflective thought:

> (1) Perplexity, confusion, doubt; (2) Attentive interpretation of the given elements; (3) Examination, exploration and analysis to define and clarify the problem; (4) Elaboration of the tentative hypothesis; and (5) Testing the hypothesis by doing something overtly to bring about anticipated results. (p. 12)

Kolb (1984), advances reflection a step further and noted that reflection should be to actually take action to a new and changed behavior. Kolb details this concept in the experiential learning cycle, where a learner flows through concrete experiences, reflective observation, abstract conceptualization and active experimentation. Kolb's learning style provides the opportunity for input and processing of information (pp. 17-39).

Why is this critical reflection so important? Brookfield (1995) purports that it helps professionals to make informed actions and develop a rationale for practice. Brookfield believes that it helps professionals avoid self laceration, serves for emotional grounds, enlivens professional practices and increases democratic trust (pp.4-6).

The importance of critical reflection was elaborated on by Schon (1992), asserting that managing the complexity is the challenge for the RP professional. Schon maintains that a RP has an unprecedented requirement for adaptability and is cognizant of the tension between theory and practice. Schon believes in the concepts of "reflection in action", "knowing in action", "reflection on action" and "recognizing surprise" in terms of professional work interactions (pp. 13-19). Schon states that "good practice generates new knowledge" (p. 20). Schon looks critically at how a professional readjusts in the day-to-day practice as key for development.

Hatcher and Bringle (in press) echo Schon's sentiments, reflection activities develop self-assessment skills as a life-long learner and explore and clarify values that can lead to civic responsibility. Hatcher and Bringle (in press) believe reflection activities serve to:

> . . . engage students in the intentional consideration of their experiences in light of particular learning objectives, and provide an opportunity for students to: (a) gain further understanding of the course content and discipline, (b) gain further understanding of the service experience, (c) develop self-assessment skills as a life-long learner, and (d) explore and clarify values that can lead to civic responsibility.

These activities incorporate learning from experiences in society, such as through clinical experiences in physical therapy. Eyler, Giles, and Schmiede (1994) consider the "4 C's of Reflection" as viable activities for the RP, these include, "continuous reflection, connected reflection, challenging reflection and conceptualized reflection" (p. 328). Furthermore,

Williams and Driscoll (1997), propose the following guidelines for facilitating student reflection: "Structured as ongoing aspect of the course; offered in multiple forms; included in assessment; modeled by the instructor; connected to course content; and supported by class context" (p. 41). These guidelines are mirrored by Hatcher and Bringle (in press), in their specifications for effective reflection activities, "link experience to learning, are guided, occur regularly, allow feedback and assessment, foster the exploration and clarification of values." Hatcher and Bringle offered the following examples of reflection activities, personal journals, directed writings and readings, case studies, portfolios, assessment techniques, experiential research and personal narratives.

Ostermann and Kottkamp (1993) define reflective practice as a "professional development strategy designed to enable professionals to change their behavior, thereby improving the quality of their performance" (p. 66). These authors argued that reflective practice is neither a solitary nor a relaxed meditative process. Rather, it is a demanding practice that is most often successful in a collaborative mode. The purpose is two-fold: (a) to initiate a behavioral change, and (b) to realize an improvement in professional practice. A reflective practitioner exposes the discrepancy between theory and practice and creates a self-awareness of the unacceptable outcomes and drives toward a new behavioral change for development.

Problem-Based Learning (PBL)

When looking at the problems in a profession as the content of learning experiences, it becomes evident that PBL promises to be an appropriate means of learning, to achieve RP. PBL has the potential to link theory and practice, according to Bridges (1992), this strategy avows to deliver more of an improvement of practice in the field than the current efforts to transmit conceptual knowledge in a traditional lecture format. This juxtaposition of experience and theory makes the difference. PBL not only provides the opportunity to learn new skills but also a practical context in which to test new professional behaviors.

Outcomes

Alspach (1995) discusses Kramer's phases of reality shock, cited in The educational process in nursing staff development, for the new graduate nurse. These phasès or steps proceed, if they proceed, from the honeymoon, to shock, to recovery and resolution. In the end, the ideal is that the new graduate will resolve the:

> perceived conflict between work and school values either by rejecting one set of values or the other, or (ideally) integrating the positive aspects of each set of values into one set that is realistic for the work setting; the term biculturalism refers to this blending of school and work value systems. (Alspach, 1995, p. 206)

With consideration of these phases, for the new graduate, it is important to offer support as the new graduate develops. Clinical faculty serve a prominent and ever-changing role in offering appropriate support, as new health care graduates go through these professional cultural adjustments.

According to Alspach (1995), "the capacity to solve problems is one of the hallmarks of professional practice" (p. 251). In addition, health care professionals must be capable of employing competent clinical decision making skills. As educators cannot predict the future of how health care will be delivered, however, educators can predict that health care workers will need to be capable of these methods of critical analysis. Therefore, the need to identify competency in these skills or recommend continuing education to address any gaps in the process of the steps in the decision-making model or reflective practice abilities, is key.

Physical Therapy Outcomes in Health Care

There is a need for physical therapists to understand the health care delivery system in relation to outcomes. According to Stewart and Abeln (1993):

> As providers of specialty rehabilitation services, physical therapists often have limited awareness of the intricacies of the delivery system in which they work. This limitation contributes to a lack of understanding of the relationship between the services they provide and control and distribution of financial resources of health care services in general. Physical therapists often lose sight of the "big picture" as they become intensely involved in their own professional agendas. Consequently they approach their practice without realizing that their priorities, may at times, be very different from those of the delivery system. (p. 1)

Graduate Outcomes in Physical Therapy Education

Employing PBL in PT education is purported to assist in the development of a reflective, lifelong learner. Koschman, Kelson, Feltovich, and Barrows (1996), described the components of PBL as including the intermatrixing of problem formulating, self-

directed learning, reflecting, abstracting and applying knowledge. However, educational systems are producing graduates that fall short of the expectation of being capable of, among other things, reflecting upon the performance and continuing the process of learning. This is part of the researchers argument for utilizing PBL methodology in curriculums. Grant Wiggins (1997), of the Center on Learning, Assessment and School Structure, echoed these considerations, claiming that no learning takes place without feedback and problem-based learning builds feedback in the loop, showing true understanding and skill.

In addition, May, Morgan, Lemke, Karst, and Stone (1995), considering those with whom the PT graduates will work with, surveyed physical therapy clinical educators from 76 clinical sites, using the Delphi technique. Physical therapy clinical educators were asked to identify generic abilities critically important to physical therapy practice. These criteria were then developed into ability-based assessments for the University of Wisconsin-Madison PT program. The impetus for this study came from academic faculty inquiring with the clinical educators about why some students fail to make the transition from didactic courses to the clinical internship. Generic abilities included, in rank order:

> 1. Commitment to learning: The ability to self-assess, self correct and self direct; to identify needs and sources of learning; and to continually seek new knowledge and understanding. 2. Interpersonal skills: The ability to interact effectively with patients, families, colleagues, other health care professionals and the community and to deal effectively with cultural and ethnic diversity issues. 3. Communication skills: The ability to communicate

> effectively (i.e., speaking body language, reading, writing, listening) for varied audiences and purposes. 4. Effective use of time and resources: The ability to obtain the maximum benefit from a minimum investment of time and resources. 5. Use of constructive feedback: The ability to identify sources of and seek out feedback and to effectively use and provide feedback for improving personal interaction. 6. Problem solving: The ability to recognize and define problems, analyze data, develop and implement solutions, and evaluate outcomes. 7. Professionalism: The ability to exhibit appropriate professional conduct and to represent the profession effectively. 8. Responsibility: The ability to fulfill commitments and to be accountable for actions and outcomes. 9. Critical thinking: The ability to question logically; to identify, generate and evaluate elements of logical argument; to recognize and differentiate facts, illusions, assumptions and hidden assumptions; and to distinguish the relevant from the irrelevant. 10. Stress management: The ability to identify sources of stress and to develop effective coping behaviors. (p. 4)

These criteria were in agreement with the mission and philosophy of Nova Southeastern University PT (see Appendix A) and the Commission on Accreditation of Physical Therapy Education standards (see Appendix B). The disadvantage, noted by, May, Morgan, Lemke, Karst, and Stone (1995), was that ability-based assessment of this nature focuses more on outcome, rather than content. However, this is the direction being demanded by the consumer and employer.

Development of the Reflective Teaching Instrument (RTI)

According to Kirby and Teddlie (1989), an initial attempt was made by the researchers to operationalize the constructs of reflective teaching. Kirby and Teddlie utilized the concepts of Argyris (1991) and Schon (1987), to provide a theoretical framework with the following constructs employed, diagnosis,

testing and personal causation. Kirby and Teddlie defined these terms as follows:

> . . . diagnosis as problem setting or the ability to set or frame the problem based on professional knowledge, past experience, the uniqueness of the situation and people involved, social and professional norms of behaviors and expectations held by others. Testing was defined by these researchers as the RP taking an exploratory stance, evaluating the problem according to its ability to be solved, the desirability of the solution, and the congruence of the solution with fundamental values and theories held by the practitioner. Finally, personal causation was defined as acceptance of responsibility for actions and their consequences. (p. 46)

According to Kirby and Teddlie, the RTI was developed around the three dimensions of RP; specifically, the constructs of diagnosis, testing and personal causation. The researchers developed the instrument by item generation of 60 items from a review of the literature.

Following this, face validity was established with an expert panel, consisting of three professors of educational administration and research and one doctoral student in education, using Q-sort techniques. Twelve items were eliminated because of less than 75% agreement. After this step, a pilot study was conducted with 40 graduates students in education. Then another study, of the revised scale for construct validity and reliability, was completed, with a field study of 102 classroom teachers. The final product consisted of a 15-item Likert scale instrument. The researchers determined a teachers RP score as the sum of scores in each of the three dimensions, diagnosis, testing and personal causation. The Cronbach alpha reliability coefficient of the 15 item scale was .70, validity

was supported through factor analysis and correlation with two scales measuring related constructs (Kirby & Teddlie, 1989, pp. 45-50).

Kirby and Teddlie (1989) expressed concern that the difficulty of quantifying these RP constructs comes from the fact that the nature of the components are intangible. The researchers were hoping to be able to show positive relationships between inquiry oriented education and positive scores on the reflective teaching instrument.

Summary

The need for fostering the characteristics of reflective practice in professional education is evidenced in the literature review. These construct dimensions of RP have been considered predominantly from a qualitative perspective and few studies have been attempted in terms of quantitative measures of RP characteristics. PBL is an instructional methodology designed to aid in enhancing RP characteristics. Although educators are purporting RP, outcome measures are needed to ascertain the extent to which the RP characteristics are being attained by professional students in the health professions. The RTI was an attempt to quantify the RP characteristics in the profession of education and may be appropriate, with modification, to measure RP characteristics in a quantitative fashion for professionals in other disciplines.

Chapter 3

METHODOLOGY AND PROCEDURES

Introduction

This study used a quasi-experimental research design, employing inferential statistics. For the purposes of this study, two independent groups were compared. The samples used in this study were first year Nova Southeastern University Master's in Physical Therapy (NSU MPT) students, Class of '98, and second year NSU MPT graduate candidates, Class of '97. The first year students had completed one year of the NSU PT problem-based learning (PBL) curriculum and the second year students had completed two years of the novel NSU PT PBL curriculum, with a 20-week clinical education internship.

Data Collection

Description of the Population

The population for this study was all current and future students enrolled in the Nova Southeastern University Physical Therapy Program. These are full-time, professional students in an entry-level Master's in Physical Therapy Program curriculum.

Sample

The sample consisted of a cluster sample of all students in the two classes of NSU MPT students. There were 100 first year students and 68 second year students (graduate candidates) in the naturally occurring sample. Therefore, all NSU MPT students were selected for the sample for this research study. Each group of students consisted of a homogenous sample. The sample age range

was from 23 to 42 years, there was a tantamount representation of gender, and sufficient pluralism in the sample.

Instrument

The literature was researched to assure that the Reflective Teaching Instrument (RTI) was the most suitable method for the quantitative measurement of Reflective Practitioner (RP) characteristics for the profession of physical therapy (PT). No other quantitative instrument was identified, in the literature searches, to measure the RP characteristics. Following the literature search, permission to use and modify (see Appendix C) the instrument was granted by electronic mail and telephone communication with the author of the research instrument (P. Kirby, personal communication, June 27, 1997).

The instrument was originally developed by Kirby and Teddlie (1989), to operationalize the constructs of reflective practice in teaching. These researchers utilized the concepts of Argyris (1991) and Schon (1987), to provide a theoretical framework using the following constructs, diagnosis, testing, and personal causation. The instrument was developed around the three dimensions. The researchers developed the instrument by item generation, with 60 items, from a review of the literature.

Next, Kirby and Teddlie (1989) established face validity with the use of an expert panel, using Q-sort techniques. After this step, a pilot study was conducted with 40 graduates in education. Following this, another study of the revised scale for construct validity and reliability was conducted, with a

field study of 102 classroom teachers. The final product, RTI, consisted of a 15-item Likert scale instrument with RP sum scores possible in the three construct dimensions, including, diagnosis (four items), testing (five items) and personal causation (six items). The Cronbach alpha reliability coefficient of the 15-item scale was .70, validity was supported through factor analysis and correlation with two scales, measuring related constructs.

Procedures

First, an extensive literature review was completed to determine the most suitable instrument to measure, in a quantitative fashion, the reflective practitioner characteristics for NSU PT. In addition, the literature was reviewed for the broad concepts of reflective practice, the benefits of problem-based learning, in the development of the reflective practitioner and graduate outcomes in physical therapy education, in terms of reflective practice requirements. Then a critique of the Reflective Teaching Instrument (Kirby & Teddlie, 1989) was completed. Both a null and alternative hypothesis was stated for the research study.

Second, permission was granted from the instrument author (P. Kirby, personal communication, June 27, 1997), to modify and implement the instrument (see Appendix C). The modification consisted of substituting physical therapy terminology for education terminology within the instrument items. For example, the word students was replaced with the term, patients, the word

classroom setting was replaced with the term health care setting, the word teaching practice was replaced with the term physical therapy practice.

Third, for the purposes of the Nova Southeastern University Physical Therapy Program (NSU PT) study, the modified RTI was validated. The instrument terminology was tailored for NSU PT through a review by three NSU PT faculty, serving as a formative committee, to validate the alterations made in the RTI, to reflect physical therapy practice (see Appendix F). For the purposes of validation of the revised RPI, the formative committee was asked to indicate, yes or no, whether or not the revised Reflective Teaching Instrument (RTI), presented as the Reflective Practitioner Instrument (RPI), suitably reflected the practice of physical therapy versus educational practice. The committee was also provided an area for any open-ended comments.

Following validation by the formative committee, the final RPI consisted of a Likert scale questionnaire, with 15-items, each of the three dimension constructs, identified by Kirby and Teddlie (1989), were represented. Similar to Kirby and Teddlie's (1989) RTI, for each reflective practitioner construct, there were four items pertaining to the dimension of diagnosis, five items corresponding to the testing dimension and six items related to the dimension of personal causation, in the modified RPI for Nova Southeastern University Physical Therapy. The response instrument did not reveal the dimensions for the items, nor were the items numbered in any manner. The respondents were

asked to provide a Likert scale response in relation to each of the 15-items.

Fourth, the RPI survey instrument, cover letter, and demographic survey was assembled for distribution, by the researcher, to the sample of 168 students via mailing, with a self-addressed stamped envelope to facilitate return (see Appendixes D and E). The cover letter, from the researcher, included with the survey instrument mailing, explained the importance of participation and assurance of anonymity of responses (see Appendix E). A deadline of four weeks from the mailing date was indicated to the surveyed sample.

Fifth, the data collection occurred as RPI surveys were returned and a reminder mailing was sent to those in the sample that did not return the survey by the deadline, of four weeks, noted in the cover letter. The non-respondents were given two weeks to return the responses to the follow-up Reflective Practitioner Instrument.

A 60% return rate was the minimum desired, which is typical of the expected return from questionnaires (McMillan & Schumacher, 1993, p. 282). However, an 80% return rate was expected, as delineated by Issaac and Hayes (1995, p. 142), as an acceptable percentage, without the possibility of sampling bias.

Sixth, the demographic responses were separated from the RPI responses. Then the raw data was tabulated with categories for each group including, reflective practitioner construct dimension code, RP item, and scaled number of responses from the Likert

scale for each of the 15 item. The sample size was noted and the return rate was calculated. Next, statistical analysis was completed with an appropriate statistical software package and the appropriate statistical test was selected. The mean, standard deviation, and t-value were calculated for the sample for each construct, the p-value was identified and the data was arranged in table format. In addition, the degrees of freedom was noted in the data table, and the critical region was determined. Following the data analysis, a decision was made regarding the null hypothesis.

Finally, the results were interpreted. The conclusions, implications and a discussion of the results was completed as a result of the literature review, implementation of the RPI to the NSU PT student sample, and statistical analysis. Recommendations were made to the faculty, students, and acting program director at NSU PT and the need for further research was noted.

Treatment

The first year NSU PT (Class of '98) students had completed one full year of professional Master's in PT curriculum in the NSU problem-based learning (PBL) program. The second year NSU PT (Class of '97) students or graduate candidates, had completed the entire NSU PT PBL curriculum and an additional 20-week clinical education experience.

Reflective Practitioner (RP) is a portion of the mission statement of the NSU PT Program (see Appendix A). The concept of RP entails questioning assumptions in practice, for personal

growth, by deliberately taking time to recall and analyze actions taken and the processes used to arrive at these actions. The NSU PT curriculum provides opportunities for RP to be fostered through the following instructional strategies: incorporation of the clinical decision-making model, utilization of reflective personal journals and professional RP guided clinical logs, case study analysis, occasions for both formative and summative feedback, completion of a capstone research thesis with defense, some opportunities for self and peer assessment and some directed writings. PBL tutorials guide the students in these processes with raising of learning issues and questioning regarding thought processes. The students' problem-solving activities are given written feedback, as needed, by the NSU PT faculty. The curriculum is aligned with the American Physical Therapy Association, Commission on Accreditation of Physical Therapy Education Statements (see Appendix B).

The objective anticipated by the refelctive practitoner activities in the Nova Southeastern University PT PBL curriculum is the ability to link theory and practice (Bridges, 1992). These reflective practitioner actions will, according to Ostermann and Kottkamp (1993), initiate a behavioral change and allow the developing professional to realize an improvement in professional practice. The Problem-based learning curriculum, in theory, is designed to foster the characteristics of reflective practice.

Data Analysis

An appropriate and suitable statistical package was utilized to analyze the raw data responses. A one-tailed t-test, statistical procedure, was completed for each of the 15 RP characteristic items to determine the level of significance.

Data Presentation

Tables 1 and 2 delineate the RPI data responses, included for each group of data were the following: (a) sample size, (b) construct code, (c) item, (d) scaled number of responses for each Likert category, and (e) return rate. Table 3 illustrates the analysis of the data for each construct code as follows: (a) the mean for the graduate candidates and first year students, (b) the standard deviation for the graduate candidates and first year students, (c) the calculated t-value, and (d) the probability level.

Null Hypothesis

The null hypothesis was, ""There is no statistically significant difference, at the .05 level, between first year MPT students' and second year Nova Southeastern University MPT graduate candidate students' reflective practitioner characteristics, as measured by the Reflective Practitioner Instrument (RPI)."

Alternative Hypothesis

The alternative hypothesis was, "The second year NSU MPT graduate candidate students will exhibit statistically significant evidence of greater RP characteristics than the first

year NSU MPT students, at the .05 level of significance, as measured by the RPI."

Level of Significance

The null hypothesis was tested at the .05 alpha level of significance, for the one-tailed t-test of independent groups. Therefore, it is less likely to be a function of chance (making a Type I error), when considering the statistical significance of the results.

Region of Rejection

As the alternative hypothesis is directional, the region of rejection was located at the upper end of the distribution curve. Therefore, the critical region of rejection is located only on one of the two tails of distribution, placing all the chance of error on one side of the curve.

Statistical Test

For the purposes of this study, the statistical procedure for this hypothesis of difference, was the one-tailed t-test for independent groups. In computing the value of the t-statistic, the sample means and standard deviations were completed with the RTI response data.

Assumptions

It was assumed that the two cluster groups were similar enough in nature to compare and that the results were generalizable to the sample population. It was also assumed that the test instrument did not change as a result of the modifications. A significant limitation to this study was the

modification of educational terminology of the reflective teaching instrument to physical therapy terminology for the reflective practitioner instrument. It was assumed that the formative committee experts was able to perform the task of validation accurately. It cannot be assumed that the reflective practitioner instrument provided the reliability and validity of the reflective teaching instrument. Therefore, the validity and reliability may not have been the same as the original instrument. It was also assumed that the return rate provided an adequate representation of the sample for the purposes of generalizability.

Limitations

The research study was limited in that it was only looking at the RP characteristics identified by Kirby and Teddlie (1989) and there may be other pertinent characteristics that were not considered or beyond the scope of this quantitative study. The results of this study were not generalizable beyond the current and future Nova Southeastern University problem-based learning physical therapy students. The imperfect reliability and validity of the reflective practitioner instrument posed major limitations. No validity, reliability or pilot studies were completed with the reflective practitioner instrument (modified RTI), prior to implementation for the purposes of this study.

Chapter 4

RESULTS

Introduction

The purpose of this study was to compare the reflective practitioner (RP) characteristics of the first year and second year Nova Southeastern University Physical Therapy (NSU PT) students to determine whether there was a difference in reflective practitioner dimensions. A comparison of the extent to which second year NSU, masters in physical therapy (MPT) graduate candidates, and first year NSU MPT students, meet the criteria of reflective practice, according to the Reflective Practitioner Instrument (RPI), modified from the Reflective Teaching Instrument (RTI) by Kirby and Teddlie (1989), was completed.

Reflective Practitioner Instrument Validation

The modified reflective teaching instrument, was presented to the formative committee as the reflective practitioner instrument and validated unanimously without comment, for the purposes of altering educational terminology to that of appropriate phyiscal therapy (PT) terminology, for the Nova Southeastern University Physical Therapy Program students. This validation occurred for the purposes of this study.

Reflective Practitioner Instrument Results

An initial 80% total return-rate was received from the sample and a repeat mailing was completed to 20% of the sample population due to the non-return of the reflective

practitioner instrument following the four week deadline for returned responses.

Tables 1 and 2 delineate the data responses, for each group of data, the following was provided: (a) sample size, (b) construct code, (c) item, (d) scaled number of responses for each Likert category, and (e) the return rate. In Table 1, the physical therapy graduate candidates, reflective practitioner instrument response results are illustrated and the return rate of 79.4% or 54 out of 68 respondents was noted. Each reflective practitioner construct dimension was noted for each of the fifteen items, these included, diagnosis (D), testing (T), and personal causation (PC).

The majority of responses in both Tables 1 and 2, for construct dimensions of diagnosis and testing were negatively skewed for the graduate candidates and the first year students. While the construct dimension responses for personal causation presented in more of a pattern of normal distribution, for the graduate candidates and first year students.

Table 1

PT Graduate Candidates Reflective Practitioner Instrument Responses

Scale:

1 = Strongly Agree 2 = Agree 3 = Somewhat Disagree 4 = Somewhat Agree 5 = Disagree 6 = Strongly Disagree

n = 54

Code	Item	Scaled Number of Responses 1	2	3	4	5	6
D1	Great progress has recently been made in identifying PT and health care setting characteristics that contribute to patient achievement	3	19	26	3	2	1
D2	I find my own early health care experiences useful in managing my patients	22	19	7	2	3	1
D3	I feel that it is important for me to integrate theory and research into my PT practices	28	21	5	0	0	0
D4	It is incumbent upon me as a good practitioner to be familiar with current PT research	34	16	4	0	0	0
T1	I often revise my practice methods after trying them with a patient	27	18	9	0	0	0
T2	I want my patients to question my way of looking at things	9	23	14	6	2	0
T3	I often think about the "hidden agenda" i.e., does my practice help my patients adopt the values and attitudes I want them to acquire	7	13	23	7	2	2
T4	I sometimes find myself changing practice strategies in the middle of a treatment session	9	26	14	2	2	1
T5	If I can't get through to a particular patient, I experiment with different approaches	26	25	3	0	0	0

(table continues)

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Scale:

1 = Strongly Agree 2 = Agree 3 = Somewhat Disagree 4 = Somewhat Agree 5 = Disagree 6 = Strongly Disagree

n = 54

Code	Item	Scaled Number of Responses 1	2	3	4	5	6
PC1	If patients are having trouble in the health care setting, it is up to the PT to find the solution	2	17	27	6	2	0
PC2	I have a great degree of influence on the personality and attitudes of my patients	10	25	14	2	3	0
PC3	I can make the least motivated patient like therapy	0	16	21	8	9	0
PC4	If my patients do poorly in therapy, I blame myself	4	7	16	15	11	1
PC5	I'm responsible for the behavior of the patients under my care	4	6	25	6	12	1
PC6	In my practice setting, I should have the final decision in determining what is to be done and how	10	15	14	9	6	0

Note. Constructs for each of the reflective practitioner categories include: D = Diagnosis, T = Testing, PC = Personal Causation.

Table 2 illustrates the raw data for the NSU PT first year students RP responses. The return rate was 95 respondents out of 100, or 95%. The sample size was 93 as two incomplete responses were discarded. Each reflective practitioner construct dimension was noted for each of the fifteen items, these included, diagnosis (D), testing (T), and personal causation (PC).

Table 2

PT First Year Students Reflective Practitioner Instrument

Responses

Scale:

1 = Strongly Agree 2 = Agree 3 = Somewhat Disagree 4 = Somewhat Agree 5 = Disagree 6 = Strongly Disagree

n = 93

Code	Item	Scaled Number of Responses 1	2	3	4	5	6
D1	Great progress has recently been made in identifying PT and health care setting characteristics that contribute to patient achievement	5	35	45	7	1	0
D2	I find my own early health care experiences useful in managing my patients	22	44	21	3	3	0
D3	I feel that it is important for me to integrate theory and research into my PT practices	34	33	20	3	3	0
D4	It is incumbent upon me as a good practitioner to be familiar with current PT research	50	34	7	0	0	2
T1	I often revise my practice methods after trying them with a patient	22	45	22	2	2	0
T2	I want my patients to question my way of looking at things	14	34	33	7	5	0
T3	I often think about the "hidden agenda" i.e., does my practice help my patients adopt the values and attitudes I want them to acquire	5	42	30	9	5	2
T4	I sometimes find myself changing practice strategies in the middle of a treatment session	4	27	46	10	6	0
T5	If I can't get through to a particular patient, I experiment with different approaches	39	41	11	1	0	1

(table continues)

Scale:

1 = Strongly Agree 2 = Agree 3 = Somewhat Disagree 4 = Somewhat Agree 5 = Disagree 6 = Strongly Disagree

n = 93

Code	Item	Scaled Number of Responses 1	2	3	4	5	6
PC1	If patients are having trouble in the health care setting, it is up to the PT to find the solution	10	25	50	5	3	0
PC2	I have a great degree of influence on the personality and attitudes of my patients	16	32	24	12	7	2
PC3	I can make the least motivated patient like therapy	5	30	40	10	8	0
PC4	If my patients do poorly in therapy, I blame myself	3	10	40	23	13	4
PC5	I'm responsible for the behavior of the patients under my care	6	14	43	18	10	2
PC6	In my practice setting, I should have the final decision in determining what is to be done and how	10	27	27	23	5	1

Note. Constructs for each of the reflective practitioner categories include: D = Diagnosis, T = Testing, PC = Personal Causation.

Table 3 delineates the statistical analysis of the RPI responses, with analysis of the data representing each construct code: (a) the mean for the graduate candidates and first year students, (b) the standard deviation for the graduate candidates and first year students, (c) the calculated t-value, and (d) the probability level. The degrees of freedom (df) was equal to 145.

Table 3

Statistical Analysis of the RPI Responses of PT First Year Students and Graduate Candidates

df = 145

Source	Construct	Mean	Standard Deviation	t-value	p-value
Graduate	D1	2.72	0.94		
First Year		2.61	0.75	0.73	.05
Graduate	D2	2.04	1.23		
First Year		2.15	0.93	-0.59	.05
Graduate	D3	1.57	0.66		
First Year		2.22	2.30	-2.51	.05
Graduate	D4	1.44	0.63		
First Year		1.62	0.91	-1.40	.05
Graduate	T1	1.67	0.75		
First Year		2.11	0.87	-3.24	.05
Graduate	T2	2.43	1.021		
First Year		2.52	1.017	-0.52	.05
Graduate	T3	2.83	1.16		
First Year		2.66	1.09	0.91	.05
Graduate	T4	2.30	1.09		
First Year		2.82	0.96	-2.92	.05
Graduate	T5	1.57	0.60		
First Year		1.74	0.86	-1.39	.05
Graduate	PC1	2.80	0.83		
First Year		2.63	0.87	1.12	.05
Graduate	PC2	2.32	1.01		
First Year		2.66	1.25	-1.81	.05
Graduate	PC3	3.15	1.12		
First Year		3.46	4.52	-0.64	.05
Graduate	PC4	3.46	1.22		
First Year		3.48	1.10	-0.10	.05

(table continues)

df = 145

Source	Construct	Mean	Standard Deviation	t-value	p-value
Graduate	PC5	3.35	1.22		
First Year		3.19	1.10	0.79	.05
Graduate	PC6	2.74	1.26		
First Year		2.88	1.13	-0.68	.05

Note. Constructs for each of the reflective practitioner categories include: D = Diagnosis, T = Testing, PC = Personal Causation.

At the .05 level of significance for a directional one-tailed t-test, the computed t-value did not allow the null hypothesis to be rejected for any construct category. In several category constructs, D2, D3, D4, T1, T2, T4, T5, PC2, PC3, PC4, and PC6, the computed t-value was negative, indicating the first year students average greater than the graduates, in terms of these construct dimensions.

Chapter 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Discussion

The purpose of the study was to compare the reflective practitioner (RP) characteristics of the first year and second year (graduate candidates) Nova Southeastern University Master's in Physical Therapy Program (NSU MPT) students, to determine whether there was a statistically significant difference in RP construct dimension characteristics. This study investigated the RP characteristics of professional MPT students at Nova Southeastern University, enrolled in a problem-based learning (PBL) curriculum, designed to foster the development of the reflective practitioner characteristics. This curriculum design and the alignment with the NSU PT mission and philosophy statements (see Appendix A) were parallel with the expectations noted in the literature regarding this method of andragogy (Albanese & Mitchell, 1993; Barrows, 1997; Bridges, 1992; Hatcher & Bringle, in press; Williams & Driscoll, 1997; Vasconez, Donnely, Mayo & Schwartz, 1993).

As a result of an extensive literature search (CINHAL, ERIC, and MEDLINE databases), communication with an expert in PBL strategies in professional education (H. Barrows, personal communication, July 8, 1997), and communication with a developer of the Reflective Teaching Instrument (P. Kirby, personal communication, June 27, 1997), it was determined that no other quantitative studies of reflective practitioner characteristics

for professional students have been conducted. It was unknown to what extent reflective practitioner characteristics were being attained by NSU MPT program students and graduates.

Reflective practitioner characteristics have been identified in the literature as a foundation for bridging theory and practice (Argyis, 1991; Brookfield, 1995; Schon, 1987) and the need for the NSU MPT students to possess these characteristics was noted. In particular, the aspects of RP were noted as necessities for the developing professional and continued professional growth and development for decision-making purposes (Brookfield, 1995; Dewey, 1933; Kolb, 1984; Ostermann & Kottkamp, 1993; Schon, 1992). Also, in terms of RP activities, both self-assessment skills as life-long learners and clarification of values for professional responsibility are evidenced, resulting in a collaborative mode of reflection and cogitation (Eyler, Giles & Schmiede, 1994; Hatcher & Bringle, in press; Ostermann & Kottkamp, 1993).

In terms of outcomes in professional education, the need for problem-solving capacities and clinical decision-making skills were noted as hallmarks for professional practice (Alspach, 1995; Bridges, 1992). Reflection and experience were purported to be in parallel to achieve action and a new and changed behavior (Kolb, 1984; May, Morgan, Lemke, Karst & Stone, 1995; Schon, 1987, 1992).

Finally, researchers, Kirby and Teddlie (1989) attempted to provide an instrument to measure, in a quantitative fashion, the

RP characteristics of professionals in education. This work was seminal, as noted in the literature, that only qualitative measures (Hadwin, 1996) had been completed in the past, in terms of RP characteristics. Efforts are forthcoming from a professional education university, to add to the body of quantitative research for RP characteristics, per communication with a director of a school of medicine (H. Barrows, personal communication, July 8, 1997).

Conclusions

The conclusions drawn from this study related directly to the research question in the study:

Research question: "Is there a significant difference, at the .05 level, between first year MPT students' and second year NSU MPT graduate candidate students' reflective practitioner characteristics, as measured by the Reflective Practitioner Instrument (RPI)?"

Conclusion: There was no significant difference, at the .05 level, (critical value, 1.65) between first year MPT students' and second year NSU MPT graduate candidate students' RP characteristics, as measured by the reflective practitioner instrument (see Table 3). In fact, several construct dimensions were, in terms of the calculated t-value, greater for the first year students than the second year students; these construct categories included: D2, D3, D4, T1, T2, T4, T5, PC2, PC3, PC4, and PC6 (see Table 3). Therefore the null hypothesis could not be rejected. The issues of internal and external validity in

terms of the instrument were significant limitations. As the RPI (modified RTI) had not been tested for validity or reliability, the study was merely a pilot in terms of instrument utility. The reliability and validity of the RTI cannot be assumed for the RPI. This further limits the generalizability of the results. Further confounded by the fact that only the construct dimensions of Kirby and Teddlie's (1989) research were considered as this was the only quantitative instrument to measure RP characteristics, and other dimensions may exist in terms of RP. The return rate was adequate and did not pose any further limitations, allowing for generalizability to the population.

While NSU MPT students are exhibiting RPI characteristics, it does not appear to be influenced, as a result of this study, by the NSU PT PBL curriculum from year one to year two. The NSU PT PBL curriculum was intended to foster RP construct domains. However, the RP characteristics may be gleaned in the first year or may not, in actuality, be fostered with the activities in the second year and through clinical education experiences. Also, PBL is dependent upon a skillful tutor and perhaps faculty has evolved as more skillful tutors for the first year as opposed to the prior second year students. As no prior studies of this nature had been conducted, this study provided a benchmark to begin investigating the influence of the curriculum activities and reflective practitioner characteristics of Nova Southeastern University MPT students and graduates.

Implications

Although inconclusive, the implications of the study were derived directly from the result of the research question. From a student perspective, it is noteworthy that increased efforts may be needed to foster reflective practitioner characteristics. The NSU PT problem-based learning curriculum was a new design for the second year students and this was not the case for the first year students. The andragogical approach was already established and the new faculty (many with no teaching experience prior to NSU) were completing curricular instruction for the second time using a more seasoned case study method with the first year students. This may have accounted for some of the dimensions averaging greater for the first year student than second year or graduate candidates.

The purpose of the study was to determine if there were any significant differences in RP characteristics of NSU PT students. At the conclusion of this study, it was determined that RP characteristics are being exhibited by NSU MPT program students to meet the mission and philosophy of the program in terms of lifelong learning. It was expected that if RP characteristics were being demonstrated by NSU students and graduates, the entry-level clinicians will better serve society in their roles as physical therapy professionals. However, it does not appear at first blush, there is any great influence, with respect to the curriculum, in enhancing RP characteristics from the first year to the second year.

Some Reflective Practitioner activities, such as the reflective Schon log, reflective journaling and the clinical decision-making model have been incorporated into the PBL curriculum. This study aided in determining whether these activities were adequate in producing students with RP characteristics in the second year as compared with the first year students' curriculum activities. However, the NSU physical therapy curriculum is inverted from most traditional programs. That is students learn first how to think about the patient problems and select, perform and analyze assessment information and in the second year expand into treatment activities. Indeed reflection activities begin at the outset of the curriculum, however these should be further enhanced as professional development ensues. More intensive efforts may need to be considered in the curriculum development process, to foster RP constructs. The results of this study offer evidence of the RP characteristics of NSU PT students.

RP characteristics are desired by professionals in physical therapy and expected of new graduates and this study aided in determining to what extent the RP characteristics differ between first and second year students. For second year students, the external curriculum, clinical education, may have been a confounding variable. RP characteristics are evidenced by NSU PT, but not to any significantly greater degree in the second year, therefore consideration to strengthen the reflective curriculum components is indicated.

However, caution must be considered when interpreting these results due to the inherent imperfect reliability of the instrument. In so far as this was evidenced, the literature does provide sufficient evidence for methods of fostering reflective practice, that were not currently utilized in the curriculum for the developing professional. It may behoove NSU PT to implement more of these strategies, to address the potential RP construct dimension issues. Also, students may be responding to the instrument in ways to appease a faculty member. Therefore, the need for further qualitative investigation and standardization of quantitative instruments for the purpose of further investigation of these RP characteristics is noted.

Recommendations

The following recommendations were suggested by the research to continue the investigation and development of reflective practitioner characteristics for the NSU developing PT professional in physical therapy:

First, it was recommended by the researcher to the acting program director that the results of this study be shared with faculty and students following approval. The results should be disseminated immediately to NSU PT students and faculty.

Second, it was recommended that the study be repeated, following further reliablity and validity testing of the RPI for physical therapy at NSU PT. The researcher made this recommendation to the acting program director and shared this recommendation with NSU PT faculty.

Third, it was recommended by the researcher, to the acting director and faculty, that faculty consider incorporating more formalized activities, within the curriculum, designed to foster and enhance RP characteristics. These include, but were not limited, portfolios, peer and self-assessment, personal journals, directed writings and readings, case studies, experiential research and assessment techniques. While some of these instructional strategies have been utilized, many require increased emphasis and continual implementation throughout the curriculum. This recommendation was made specifically to the curriculum committee, following discussion with the acting program director.

Fourth, the researcher recommended a study to design and develop portfolio criteria and a corollary peer and self-assessment instrument, to both the acting director and curriculum committee. This research recommendation was immediately approved and implemented in the Fall semester of 1997.

Fifth, it was recommended by the researcher to the acting program director and faculty that a plan to develop increased self-assessment and peer assessment be considered in 1998, for investigation by the researcher for NSU PT. A more formalized approach to incorporating self-assessment and other RP enhancement activities warrants further consideration and investigation for the developing professional. Further qualitative analysis was suggested by the researcher to glean descriptive information on the reflective practitioner

characteristics of Nova Southeastern University physical therapy students, in relation to other developing professionals in the next year.

REFERENCES

Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. Academic Medicine, 68(1), 52-81.

Alreck, P. L., & Settle, R. (1995). The survey research handbook. Chicago, IL: Irwin.

Alspach, J. G. (1995). The educational process in nursing staff development. St. Louis, MO: Mosby.

American Physical Therapy Association.(1995, a.). A guide to physical therapist practice, Volume I: A description of patient management. Physical Therapy, 75, 707-764.

American Physical Therapy Association.(1995, b.). DRAFT, physical therapist student clinical performance instrument. Task Force on the Development of Student Clinical Performance Instruments. Alexandria, VA: August.

American Physical Therapy Association.(1996). APTA accreditation update: Newsletter from the department of accreditation. Alexandria, VA: APTA.

Argyris, C.(1991). Teaching smart people how to learn. Harvard Business Review, 69(3), 94-109.

Barrows, H. S.(1997). The problem-based learning curriculum at Southern Illinois University School of Medicine. Retrieved May 21, 1997 from the World Wide Web: http://www.siumed.edu/pblcur.html.

Bridges, E. M.(1992). Problem-based learning for administrators. Eugene, OR: ERIC Clearinghouse on Educational Management.

Brookfield, S.(1995). Becoming a critically reflective teacher. San Francisco, CA: Jossey-Bass.

Dewey, J.(1933). How we think. Boston, MA: Heath.

Eyler, J., Giles, D. W., & Schmiede, L.(1994). The impact of a college community service lab on students' personal, social and cognitive outcomes. Journal of Adolescence, 17, 327-329.

Hadwin, A. F.(1996). Promoting self-regulation: Examining the relationships between problem-based learning in medicine and the strategic content learning approach. Paper presented at American Educational Research Association Annual Conference. New York, NY: (ERIC Document Reproduction Service No. ED 396 935)

BEST COPY AVAILABLE

Hatcher, J., & Bringle, R.(in press). Reflection: Bridging the gap between service and learning. College Teaching: IUPUI.

Isaac, S., & Michael, W. B.(1995). Handbook in research and evaluation (3rd ed.). San Diego, CA: Educational and Industrial Testing Services.

Kirby, P. C., & Teddlie, C.(1989). Development of the reflective teaching instrument. Journal of Research and Development in Education, 22(4), 45-50.

Kolb, D. A.(1984). Experiential learning: Experience as the source of learning and development. New Jersey: Prentice Hall.

Koschman, T., Kelson, A. C., Feltovich, P. J., & Barrows, H. (1996). CSCL: Theory and practice of an emerging paradigm. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

May, W. W., Morgan, B. J., Lemke, J. C., Karst, G. M. & Stone, H. L. (1995). Model for ability-based assessment in physical therapy education. Journal of Physical Therapy Education, 9(1), 3-6.

McMillan, J. H., Schumacher, S.(1993). Research in education: A conceptual introduction (3rd ed.). New York, NY: HarperCollins College Publishers.

Ostermann, K. F., & Kottkamp, R. B.(1993). Reflective practice for educators: Improving schooling through professional development. Newbury Park, CA: Corwin Press, Inc.

Schon, D.(1987). Educating the reflective practitioner. San Francisco, CA: Jossey-Bass Publishers.

Schon, D.(1992). The theory of inquiry: Dewey's legacy to education. Curriculum Inquiry, 22(2), 119-140.

Stewart, D. L. & Abeln, S. H. (1993). Documenting functional outcomes in physical therapy. St. Louis, MO: Mosby.

Vasconez, H. C., Donnelly, M. B., Mayo, P., & Schwartz, R. W.(1993). Student perceptions of the effectiveness of a problem-based surgery curriculum. Academic Medicine, 68, (Suppl.), S28-S30.

Wiggins, G. (1997). Feedback: How learning occurs, and the implications for instruction and assessment. AAHE Conference on Assessment & Quality. Plenary session. Miami Beach, FL: AAHE.

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Williams, D., & Driscoll, A.(1997). Connecting curriculum content with community service: Guidelines for student reflection. Journal of Public Service and Outreach, 2(1), 33-42.

APPENDIXES

Appendix A

Nova Southeastern University Mission and Philosophy Statements

Nova Southeastern University Mission Statement

Nova Southeastern University is a dynamic, not-for-profit independent institution dedicated to providing high quality educational programs of distinction from pre-school through the professional and doctoral levels, as well as service to the community. Nova Southeastern University prepares students for lifelong learning and leadership roles in business and the professions. It offers academic programs at times convenient to students, employing innovative delivery systems and rich learning resources on campus and at distant sites. The University fosters inquiry, research, and creative professional activity, by uniting faculty and students in acquiring and applying knowledge in clinical, community, and professional settings.

Approved by the Board of Trustees March 24, 1997

NSU Health Professions Division Mission Statement

The mission of the Health Professions Division is to train primary care health practitioners in a multi disciplinary setting, especially for under served areas.

NSU Physical Therapy Program Mission Statement

The mission of the NSU Physical Therapy Program is to prepare physical therapists as primary health care providers. Operational definition: Physical therapist as primary health care provider: a physical therapist who is the initial, first or principal care provider for the diagnosis and treatment of physical impairments, functional limitations and disabilities that result in movement dysfunction.

NSU Physical Therapy Program Philosophy

We believe the physical therapist--diagnoses, plans, treat and supervises care for physical impairments and disabilities that are the result of dysfunction of any body system, must be prepared to consider the influence of mind, body and spirit on health in order to prevent dysfunction and promote wellness, must anticipate the need for change in the profession and health care delivery, must contribute to the body of knowledge of physical therapy and be supportive of the collegial search for truth.

We believe the physical therapy profession--is committed to access to health care for all people, is essential to primary health care in order to meet the needs of the undeserved across their life spans in all strata of society, is dynamic and responsive to the health care demands of current society.

We believe that physical therapy education--demands a strong liberal arts foundation, including foreign language, to prepare physical therapists for leadership roles in a multi-cultural society, occurs best in a creative atmosphere that fosters exchange among faculty, students, and practitioners, who are all

self-directed and able to function independently and in groups, occurs best when the roles of academic and clinical faculty are intertwined because they are equally vital to the learning process.

We believe that physical therapy faculty--must bring together a variety of academic, clinical, and life experiences which complement each other and are necessary to provide the depth and breadth of learning opportunities essential to the education of the generalist physical therapist or primary care practice.

We believe that physical therapy graduates--must be committed to serve the profession and society through contributions to the advancement of the profession in their search for new knowledge and skills as life-long learners and applied scientists, must be committed to serve the profession and society in a variety of roles such as primary care providers, consultants, advocates for the disabled and change agents.

NSU Physical Therapy Program Outcomes

Graduates will be able to--practice with integrity as generalists in primary health care in order to serve diverse populations of any age and cultural, socioeconomic, and educational status, participate in activities that insure personal and professional growth, communicate appropriately with any audience, practice ethically and legally in any health care setting, advocate for the disabled, serve as change agents in organizations, including legislative bodies, apply the principals of management and consultation in any practice setting to assure efficient and effective health care, participate in the development of knowledge that advances the profession, teach in any role, and choose actions that reflect consideration for the consequences of their decisions.

Appendix B

American Physical Therapy Association and the Commission on Accreditation of Physical Therapist Education Statements

American Physical Therapy Association

Definition of Physical Therapy:

Physical therapy, which is the care and services provided by or under the direction and supervision of a physical therapist, includes: 1) examining and evaluating patients with health-related conditions, impairments, functional limitations, and disability in order to determine a diagnosis, prognosis, and intervention; 2) alleviating impairments and functional limitations by designing, implementing, and modifying therapeutic interventions; 3) preventing injury, impairments, functional limitations, and disability, including promoting and maintaining fitness, health, and quality of life in all age populations; and 4) engaging in consultation, education, and research. (Adopted by the American Physical Therapy Association (APTA) Board of Directors in March 1995 (BOD 03-95-24-64).

Curriculum Components & Practice Expectations (excerpt)

1.0 SECTION 1: ORGANIZATION

Preamble

Physical therapists must work within the structures of their practice and of legal, social, and ethical environments; similarly, physical therapist education programs must function within the structure of the institutions in which they exist. Physical therapist education programs must be vital parts of the institutions in which they are located, and the existence of programs must be consistent with institutional missions and resources. Institutions that offer physical therapist education programs must do so because of their commitment to humanistic principles, scientific inquiry, and service to society. They must exhibit sensitivity to the role of health professions in society. Physical therapist education programs must be integral to institutional missions and be logical extensions of the institution's education and service programs.

Institutions must be committed to professional education and demonstrate awareness of the differences between professional education and traditional degree programs. Among the differences are the following: professional education requires the student to engage the entire body of knowledge related to the profession and to demonstrate accountability for the utilization of that knowledge; professional education is structured and focused on the knowledge and skills necessary for initial practice of the profession; emphasis is placed on socialization of the student into the profession, including the behavioral and ethical standards to be met; and, faculty are expected to serve as exemplary professional role models.

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Through the structure and function of the institution, graduates must be made aware of their need to build on their liberal education, to incorporate the concepts of responsible citizenship into their professional lives, to interact with other professionals, to continue their education throughout their professional careers, and to be ethical and scientifically current in order to be responsible health care practitioners. Innovation and variations from traditional approaches to professional education are institutional prerogatives that are respected and encouraged when evidence is provided that they are effective and beneficial.

3.0 SECTION 3: CURRICULUM DEVELOPMENT AND CONTENT

Preamble

A curriculum is a plan for learning, designed by the program faculty in consultation with practitioners and members of communities of interest, to achieve explicit educational goals and objectives for preparation of a physical therapist. In addition to preparing practitioners, one goal of physical therapy education is to build on the liberal education of the student by incorporating the concepts of responsible citizenship into the professional curriculum. The curriculum sets forth the knowledge, skills, attitudes, and values needed to achieve these goals.

The professional program is built on a foundation of liberal arts, and social and basic sciences. Course work within the professional curriculum includes a balance of foundational and clinical sciences; critical inquiry; clinical practice; and studies of society, health care delivery, and physical therapy practice. The educational philosophy and values of the institution, the program, and the individuals who teach in it and the knowledge of and beliefs about learning are central aspects of the curriculum.

The educational outcomes are entry-level and are based on practice expectations that are congruent with and reflect current physical therapy practice, emerging trends in health care delivery, and advances in physical therapy theory and technology.

3.1. Core faculty assume primary responsibility for curriculum development with input from all program faculty as well as from students enrolled in the program.

3.8.3. learning experiences designed to achieve educational outcomes required for initial practice of the profession of physical therapy.

Communication

3.8.3.1. Expressively and receptively communicate with all individuals when engaged in physical therapy practice, research, and education, including patients, clients, families, care givers, practitioners, consumers, payers, and policy makers.

Individual and Cultural Differences

3.8.3.2. Incorporate an understanding of the implications of individual and cultural differences when engaged in physical therapy practice, research, and education.

Professional Behavior

3.8.3.3. Demonstrate professional behaviors in all interactions

with patients, clients, families, care givers, other health care providers, students, other consumers, and payers.
3.8.3.4. Adhere to legal practice standards, including all federal, state, jurisdiction, and institutional regulations related to patient or client care, and to fiscal management.
3.8.3.5. Practice ethical decision making that is consistent with applicable professional codes of ethics, including the APTA's Code of Ethics.
3.8.3.6. Participate in peer assessment activities.
3.8.3.7. Participate in clinical education activities.
Critical Inquiry and Clinical Decision-making
3.8.3.8. Participate in the design and implementation of decision-making guidelines.
3.8.3.9. Demonstrate clinical decision-making skills, including clinical reasoning, clinical judgment, and reflective practice.
3.8.3.10. Evaluate published studies related to physical therapy practice, research, and education.
3.8.3.11. Secure and critically evaluate information related to new and established techniques and technology, legislation, policy, and environments related to patient or client care.
3.8.3.12. Participate in scholarly activities to contribute to the body of physical therapy knowledge (e.g. case reports, collaborative research).
Education
3.8.3.13. Educate others using a variety of teaching methods that are commensurate with the needs and unique characteristics of the learner.
Professional Development
3.8.3.14. Formulate and implement a plan for personal and professional career development based on self-assessment and feedback from others.
Screening
3.8.3.15. Determine the need for further examination or consultation by a physical therapist or for referral to another health care professional.
Examination
3.8.3.16. Independently examine and re-examine a patient or client by obtaining a pertinent history from the patient or client and from other relevant sources, by performing relevant systems review, and by selecting appropriate age-related tests and measures. Tests and measures (listed alphabetically) include, but are not limited to, the following:
a) aerobic capacity and endurance; b) anthropometric characteristics; c) arousal, mentation, and cognition; d) assistive and adaptive devices; e) community and work reintegration; f) cranial nerve integrity; g) environmental, home, and work barriers; h) ergonomics and body mechanics; i) gait, assisted locomotion, and balance; j) integumentary integrity; k) joint integrity and mobility; l) motor function; m) muscle performance (including strength, power, and endurance); n) neuromotor development and sensory integration; o) orthotic, protective, and supportive devices; p) pain; q) posture

r) prosthetic requirements; s) range of motion (including muscle length); t) reflex integrity; u) self care and home management (including activities of daily living and instrumental activities of daily living); v) sensory integrity (including proprioception and kinesthesia); w) ventilation, respiration, and circulation

Evaluation

3.8.3.17. Synthesize examination data to complete the physical therapy evaluation.

Diagnosis

3.8.3.18. Engage in the diagnostic process in an efficient manner consistent with the policies and procedures of the practice setting.

3.8.3.19. Engage in the diagnostic process to establish differential diagnoses for patients across the lifespan based on evaluation of results of examinations and medical and psychosocial information.

3.8.3.20. Take responsibility for communication or discussion of diagnoses or clinical impressions with other practitioners.

Prognosis

3.8.3.21. Determine patient or client prognoses based on evaluation of results of examinations and medical and psychosocial information.

Plan of Care

3.8.3.22 Collaborate with patients, clients, family members, payers, other professionals, and individuals to determine a realistic and acceptable plan of care.

3.8.3.23. Establish goals and functional outcomes that specify expected time duration.

3.8.3.24. Define achievable patient or client outcomes within available resources.

3.8.3.25. Deliver and manage a plan of care that complies with administrative policies and procedures of the practice environment.

3.8.3.26. Monitor and adjust the plan of care in response to patient or client status.

Intervention

3.8.3.27. Practice in a safe setting and manner to minimize risk to the patient, client, physical therapist, and others.

3.8.3.28. Provide direct physical therapy intervention, including delegation to support personnel when appropriate, to achieve patient or client outcomes based on the examination and on the impairment, functional limitations, and disability. Interventions (listed alphabetically) include, but are not limited to:

a) airway clearance techniques; b) debridement and wound care c) electrotherapeutic modalities; d) functional training in community and work (job, school or play) reintegration (including instrumental activities of daily living, work hardening, and work conditioning); e) functional training in self care and home management (including activities of daily living and instrumental activities of daily living); f) manual therapy techniques; g) patient-related instruction; h) physical agents and mechanical modalities; i) prescription, application, and as appropriate

fabrication of adaptive, assistive, orthotic, protective and supportive devices and equipment; j) therapeutic exercise (including aerobic conditioning)

3.8.3.29. Provide patient-related instruction to achieve patient outcomes based on impairment, functional limitations, disability and patient satisfaction.

3.8.3.30. Complete thorough, accurate, analytically sound, concise, timely, and legible documentation that follows guidelines and specific documentation formats required by the practice setting.

3.8.3.31. Take appropriate action in an emergency in any practice setting.

Outcomes Measurement and Evaluation

3.8.3.32. Implement an evaluation of individual or collective outcomes of patients or clients.

Prevention and Wellness

3.8.3.33. Identify and assess the health needs of individuals, groups, and communities, including screening, prevention, and wellness programs that are appropriate to physical therapy.

3.8.3.34. Promote optimal health by providing information on wellness, disease, impairment, functional limitations, disability, and health risks related to age, gender, culture, and lifestyle.

Management in Various Care Delivery Systems

3.8.3.35. Provide primary care to patients with neuromusculoskeletal disorders within the scope of physical therapy practice through collaboration with other members of primary care teams based on patient or client goals and expected functional outcomes and on knowledge of one's own and other's capabilities.

3.8.3.36. Provide care to patients referred by other practitioners, independently or in collaboration with other team members, based on patient or client goals and expected functional outcomes and on knowledge of one's own and other's capabilities.

3.8.3.37. Provide care to patients, in collaboration with other practitioners, in settings supportive of comprehensive and complex services based on patient or client goals and expected functional outcomes and on knowledge of one's own and other's capabilities.

3.8.3.38. Assume responsibility for the management of care based on the patient's or client's goals and expected functional outcomes and on knowledge of one's own and other's capabilities.

3.8.3.39. Manage human and material resources and services to provide high-quality, efficient physical therapy services based on the plan of care.

3.8.3.40. Interact with patients, clients, family members, other health care providers, and community-based organizations for the purpose of coordinating activities to facilitate efficient and effective patient or client care.

Administration

3.8.3.41. Delegate physical-therapy-related services to appropriate human resources.

3.8.3.42. Supervise and manage support personnel to whom tasks have been delegated.
3.8.3.43. Participate in management planning as required by the practice setting.
3.8.3.44. Participate in budgeting, billing, and reimbursement activities as required by the practice setting.
3.8.3.45. Participate in the implementation of an established marketing plan and related public relations activities as required by the practice setting.
Consultation
3.8.3.46. Provide consultation to individuals, businesses, schools, government agencies, or other organizations.
Social Responsibility
3.8.3.47. Become involved in professional organizations and activities through membership and service.
3.8.3.48. Display professional behaviors as evidenced by the use of time and effort to meet patient or client needs or by providing pro bono services.
3.8.3.49. Demonstrate social responsibility, citizenship, and advocacy, including participation in community and human service organizations and activities.

The curriculum includes content and learning experiences designed to prepare students to exhibit the above practice expectations upon graduation from the program. The expected student outcomes include those sets of knowledge and skills which the graduates are prepared to demonstrate upon successful completion of the required academic and clinical portions of the education program.

Commission on Accreditation of Physical Therapist Education

Section 4: Performance of Program Graduates

Performance of program graduates is expressed as statements of the roles and responsibilities of the physical therapist in the care of patients, education of practitioners and the public, and research and scholarly activity relevant to the advancement of physical therapy as an art and science.

Performances are described in three categories: patient care, the physical therapy delivery system; and the health care system and society. The program graduates recognize how social, economic, legislative and demographic factors influence the delivery of health care in the United States.

In judging compliance with the following evaluative criteria, the Commission on Accreditation in Physical Therapy Education and the On-site evaluators will seek evidence about the performance of program graduates. Evidence which supports compliance may include surveys of program graduates, surveys of clinical faculty and information solicited from employers and patients/clients of program graduates.

4.1. Patient Care

4.1.1 The program graduates practice in an ethical, legal, safe, caring and effective manner which is demonstrated by practicing

with a knowledge of:

4.1.1.1. the scientific basis and effectiveness of physical therapy evaluation, prevention, and treatment procedures;

4.1.1.2. standards of practice

4.1.1.3. applicable state and federal laws;

4.1.1.4. ethical principles;

4.1.1.5. the scope of their abilities in the delivery of care;

4.1.1.6. their responsibility to refer to other physical therapists and members of the health care team when indicated.

4.1.2. The program graduates are able to screen individual to determine the need for physical therapy examination of for referral to other health professionals by:

4.1.2.1. identifying potential health problems;

4.1.2.2. recognizing patient problems that may require other professional attention in addition to that from a physical therapist.

4.1.3. The program graduates determine in any patient with physical dysfunction a diagnosis that is within the scope of physical therapy by:

4.1.3.1. obtaining pertinent history and identifying patient problems through interview or other appropriate methods;

4.1.3.2. selecting and performing appropriate examinations and interpreting the results of physical therapy examinations of the neurological, musculoskeletal, cardiovascular, pulmonary, integumentary, and other systems as appropriate.

4.1.4. The program graduates design a comprehensive physical therapy plan of care that includes:

4.1.4.1. realistic measurable physical therapy goals and length of achievement;

4.1.4.2. therapeutic procedures that have the potential for achieving the goals;

4.1.4.3. recognition of the influence of biological, psychological, cognitive, social and cultural factors on compliance and the achievement of goals;

4.1.4.4. concepts of health maintenance and promotion and prevention of disease and disability;

4.1.4.5. collaboration with patients, families, those individuals responsible for the patient and colleagues.

4.1.4.6. re-evaluation and modification of the plan, treatment and goals.

4.1.5. The program graduates manage a physical therapy plan of care by:

4.1.5.1. implementing a comprehensive treatment plan.

4.1.5.2. interacting with patients and families in a manner which provides the desired psychosocial support;

4.1.5.3. appropriately delegating to and directing the physical therapist assistant and supervising other support personnel;

4.1.5.4. participating in discharge planning and follow-up care including referral to other community resources as indicated;

4.1.5.5. documenting relevant aspects of history, examination, assessment, planning and treatment;

4.1.5.6. demonstrating effective written, oral and nonverbal communication with patients and their families, colleagues, other health providers and the public;

4.1.5.7. promoting effective interpersonal relationships in all aspects of professional practice.

4.2. Physical Therapy Delivery System

In each case, it is important that program graduates recognize the influence of social, economic, legislative and demographic factors on the delivery of health care. The successful graduate interacts with other health care professionals in ways that reflect the willingness to add new information to the system and effectively represent one's role and responsibility. The program graduates are knowledgeable of the fiscal management of physical therapy services. The program graduates are able to:

4.2.1. apply concepts and principles of management in the provision of physical therapy to individuals, organizations, and communities;

4.2.2. apply concepts of teaching and learning theories in designing, implementing and evaluating learning experiences used in the education of patients, students, colleagues and the community;

4.2.3. apply basic principles of the scientific method to read and interpret professional literature, to participate in clinical research activities, and to critically analyze new concepts and findings;

4.2.4. design and implement cost effective physical therapy services;

4.2.5. plan and implement programs designed to promote and maintain health and wellness;

4.2.6. use current information management technologies

in the delivery of physical therapy services and analysis of data when indicated;

4.2.7. demonstrate effective professional writing skills;

4.2.8. assess treatment and service outcomes;

4.2.9. participate in quality assurance programs;

4.2.10. plan for future professional development to maintain a level of practice consistent with acceptable standards.

4.3. The Health Care System and Society

The program graduates are able to:

4.3.1. recognize the need for demonstrating accountability, cost effectiveness of services provided, and efficacy of services;

4.3.2. participate in developing methods to meet the physical therapy needs of society;

4.3.3. serve as consultants to individuals, colleagues in physical therapy, other health professionals, organizations and the community.

Appendix C

Reflective Teaching Instrument and Permission to Modify

Instructions for administering the
Reflective Teaching Instrument

The codes to the left of the items refer to the sub-scales to which the items belong (D = diagnosis; T = testing; PC = personal causation). These codes should be removed before administering the RTI.

The test should be entitled "RTI" only.

Items withing each sub-scale are averaged to obtain a sub-scale score.

Permission is granted to use the instrument for research purposes only. Items are not to be revised and the test may not be sold.

A summary of results obtained should be mailed to:

Dr. Peggy Kirby
Department of Educational Leadership
College of Education
University of New Orleans
New Orleans, LA 70148

Revised Reflective Teaching Instrument
15 Items Retained After Factor Analysis

D1	Great progress has recently been made in identifying teacher and school characteristics that contribute to student achievement.	1	2	3	4	5	6
D2	I find my own early school experiences useful in managing my students.	1	2	3	4	5	6
D3	I feel that it is important for me to integrate theory and research into my classroom practices	1	2	3	4	5	6
D4	It is incumbent upon me as a good practitioner to be familiar with current educational research	1	2	3	4	5	6
T1	I often revise my teaching methods after trying them in a class	1	2	3	4	5	6
T2	I want my students to question my way of looking at things	1	2	3	4	5	6
T3	I often think about the "hidden curriculum"; i.e., does my teaching help my students adopt the values and attitudes I want them to acquire?	1	2	3	4	5	6
T4	I sometimes find myself changing instructional strategies in the middle of a class session	1	2	3	4	5	6
T5	If I can't get through to a particular student, I experiment with different approaches.	1	2	3	4	5	6
PC1	If students are having trouble in school it's up to the teacher to find the solution.	1	2	3	4	5	6
PC2	I have a great degree of influence on the personality and attitudes of my students.	1	2	3	4	5	6

PC3	I can make the least motivated student like school.	1	2	3	4	5	6
PC4	If my students do poorly on a test, I blame myself.	1	2	3	4	5	6
PC5	I'm responsible for the behavior of the students in my class.	1	2	3	4	5	6
PC6	In my classroom I should have the final decision in determining what is taught and how.	1	2	3	4	5	6

Appendix D

Reflective Practitioner Instrument

RPI

Directions: Please circle the number that indicates how much you agree or disagree with each statement.

Scale

1 Strongly Agree
2 Agree
3 Somewhat Agree
4 Somwhat Disagree
5 Disagree
6 Strongly Disagree

Great progress has recently been made in identifying physical therapist and Health care setting characteristics that contribute to patient achievement

1 2 3 4 5 6

I find many of my own early health care experiences useful in managing my patients

1 2 3 4 5 6

I feel that it is important for me to integrate theory and research into my physical therapy practices

1 2 3 4 5 6

It is incumbent upon me as a good practitioner to be familiar with current physical therapy research

1 2 3 4 5 6

I often revise my practice methods after trying them with a patient

1 2 3 4 5 6

I want my patients to question my way of looking at things

1 2 3 4 5 6

I often think about the "hidden agenda" ; i.e. does my practice help my patients adopt the values and attitudes I want them to acquire

1 2 3 4 5 6

I sometimes find myself changing practice strategies in the middle of a treatment session

1 2 3 4 5 6

If I can't get through to a particular patient, I experiment with different approaches

1 2 3 4 5 6

If patients are having trouble in the health care setting, it is up to the physical therapist to find the solution

1 2 3 4 5 6

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I have a great degree of influence on the personality and attitudes of my patients

1 2 3 4 5 6

I can make the least motivated patient like therapy

1 2 3 4 5 6

If my patients do poorly in therapy, I blame myself

1 2 3 4 5 6

I'm responsible for the behavior of the patients under my care

1 2 3 4 5 6

In my practice setting I should have the final decision in determining what is to be done and how

1 2 3 4 5 6

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Appendix E

Survey Cover Letter and Demographic Questions

[redacted] Nova Southeastern University

June 27, 1997

Dear PT Graduate Candidate:

You have been selected to participate in my *NSU Survey*. Your needs as a future physical therapy professional are of utmost importance to the faculty at NSU and highly influential for curriculum development.

Please take a few minutes to complete the enclosed survey. Your demographic responses will be separated from your survey responses. Please be assured that your **answers are confidential**. After you have completed the questionnaire, **please return the questionnaire to Gina Musolino in the enclosed self-addressed postage-paid envelope by July 30, 1997**.

The Nova Southeastern University Physical Therapy program is making every effort to best prepare future PT professionals. Your input is integral to our development and planning process at NSU. The highest possible "return rate" is essential to assure the validity of the survey and to assure that the results are representative of our students.

Thank you for helping NSU and I continue to provide the best educational experience possible for future PT professionals. Best of luck to each of you as you begin your professional careers.

Sincerely,

Ms. Gina Musolino, MSEd, PT
Assistant Professor

Enclosure: RPI and Demographic Survey

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[redacted] *to the Class of 1997!*

NSU Survey

Directions: Please fill in the responses below. Thank you!

Name:_____ Age:_____ Sex:_____

Other health care experience AND number of years, prior to PT school: (ex. ATC, PTA, Ex Science...)

_____

_____

_____

_____

_____

Type of clinical education experience for Tier II: (ex. Acute, Subacute, Home Health, Industrial Medicine, Rehabilitation, SNF, please list all)

_____

_____

_____

_____

_____

_____

Other work related experience prior to PT school AND number of years: (ex. CPA, elementary education teacher, chemical engineer, research assistant)

_____

_____

_____

_____

_____

_____

_____

Please indicate if you would like to receive survey results: (circle one)

Yes or NO

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Appendix F

Formative Committee and Validation Instrument

Formative Committee Members	Title
Catherine Page, PhD, PT	Immediate Former Director NSU PT, Professor
Stanley Wilson, MS, PT	Assistant Professor, NSU PT
Dawn Brown-Cross, MS, PT	Assistant Professor, NSU PT

Formative Committee Validation Question

Does the revised Reflective Teaching Instrument, presented as the Reflective Practitioner Instrument, suitably reflect physical therapy practice versus educational practice?

Yes or No

Comments (if any):

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